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Continent and its inhabitants, early predicted, he lived to see realized.

Uniform as he was in opinion respecting the political objects which so long convulsed the empire, he was either misrepresented or not understood. He was so accurately informed of the power of America, and with the wishes of some of the principal of its inhabitants, that, long before the fatal transaction at Lexington, he foretold, as probable consequences of the projected measures, many of the great events which time has since evolved. If a man is censurable for the accomplishment of his predictions, Dr. Fothergill was certainly so; but were such reasoning admissible, all the great characters of sacred and general history, whom we have been hitherto accustomed to reverence, must fall under a similar predicament: if their sagacity,

or their superior information, had enlarged their views, and enabled them with precision to estimate the result of certain actions, the rulers to whom they communicated their observations, and who, possessing the power, but being perhaps otherwise informed, did not take adequate precautions to prevent what had been foretold, have been deemed answerable for the event. No man laboured more anxiously than Dr. Fothergill did, to prevent what he predicted as eventual from the prosecution of certain measures—the dismemberment of the empire.

As he had access, by his profession, to families of the first distinction, he embraced occasional opportunities of suggesting his opinion of the prevailing system of politics, and the effects most likely to result from the prosecution of it.

*To be continued.*

#### DISCOVERIES AND IMPROVEMENTS IN ARTS, MANUFACTURES, &c.

*Patent of Mr. Joseph Cuff of White-Chapel, London, Cheesemonger, for machinery for more easy and expeditious slaughtering of hogs, bullocks and other cattle; dated August, 1808.*

**M**ORE expeditious slaughtering of cattle, consists of a vertical frame divided into a number of spaces of the breadth of the cattle, like so many troughs arranged beside each other, in an upright position; above these, and in the same line with them, is placed a horizontal beam by which the cattle are to be drawn up, on this beam a ring is placed so as to traverse its whole length as desired, to which a pulley and tackle are fastened, through which a cord passes to a small windlass at one end of the building; the animals to be slaughtered are driven into a pen in front of this apparatus, and are in succession, fastened to a hook at bottom of one of the divisions, by a short rope looped at each end over iron thimbles, which passes round one or both of the hind

legs. The tackle is then lowered, a man in the pen, hooks it to the looped rope, and another man at the windlass winds the beast up to the desired height, when a boy standing on the top of the divisions puts the other eye of the looped rope over a hook above the frame, frees the tackle, shifts the ring from which it is suspended to the next division, and lowers it to raise the next beast, in the mean time the man in the pen, lets out the blood of the beast first raised, by cutting the arteries of its neck in the usual manner;—and these operations are repeated with each beast successively till the whole number is slaughtered.

*Remarks....* Since we are under the necessity of using the flesh of animals for our sustenance, we must submit to overcome the repugnance which all must feel in depriving them of life; but then we are the more bound to do this in the least painful manner to the animal, and to avoid every species of cruelty in the act. This does not seem to have  
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been sufficiently attended to, in Mr. Cuff's method of slaughtering, for certainly the animals must suffer great pain in being drawn up by the hind legs into the divisions of the frame; which though it is not of long duration, yet should not be inflicted: we should therefore recommend, that when Mr. Cuff's apparatus is used, the animals before they are hoisted up, after being attached to the bottom of the division, should be pithed, as it is called, by dividing the spinal marrow near the head, with a small strong knife, inserted between the vertebrae of the neck.

Mr. Cuff's apparatus might be found useful at Belfast, Waterford, Cork, and our other towns where great numbers of cattle are slaughtered; though we speak of this with some doubt, for the great strength of oxen would enable them to do much mischief to the other cattle, while the operation of hoisting first commenced. The process described could not be used for hogs, at least in the order mentioned, because their skins must be either singed or scalded to get the hair off, and it would answer no purpose to hoist them up into the divisions before this was done.

*Patent of Mr. Thomas Wells, of Erdington, Warwick, for an improved method of constructing Barrel-cocks, and Water-cocks, dated June 1869.*

The description given in the specification, of this improvement on water cocks, is contained in the following words.

"The superior excellence, of these cocks, depends on the construction of that part of the cock, which contains the plug or key, and is called the barrel, so that it cannot leak, and that no liquor can pass through it except when the key or plug is turned for that purpose. This is accomplished, by making grooves in the inside of the barrel of about the eighth of an inch deep, and filling up the grooves with leather, hat (felt) or any thing else of a similar nature, that will absorb the wet. The number or direction of the grooves is not material."

A drawing accompanies the spe-

cification representing a section of the barrel of a cock divided by four vertical grooves, and two annular grooves of the kind above described one above and the other below the aperture.

*Remarks....* The statement of the Patentee, "that the position and number of the grooves is not material," is evidently not correct. A little reflection will show that the number of them, and their position, represented in the drawing, as above mentioned, is essential to prevent leakage; the annular stuffings preventing the liquor passing upwards or downwards through the barrel of the cock, and the vertical ones preventing its passing through the vent: two vertical grooves might perhaps secure it, and though a greater number could not make it less staunch, yet this number is at least necessary.

It would seem that the purpose would be answered equally well by making the grooves in the plug as in the barrel, which would have the advantage of being more easily effected, and would also admit of having the stuffing applied with more firmness, and with more facility.

It is an object of considerable consequence to breweries, to have cocks perfectly staunch; the waste of liquor through bad cocks is alone an object of importance and it is also apprehended that the liquor must get some damage from the cask, ceasing to be full after leakage has taken place. In some of the principal breweries in London, on this account, valves are adopted to retain the beer, instead of cocks, which are opened and closed by skrews, for the greater security; and, with these, leakage, is entirely prevented as far as it depends on this circumstance. The large backs belonging to the brewery of Cox, Curtis, and Co. are secured in this manner.

*Suggestions for establishing a Telegraphic intercourse between London and Dublin, by the Rev. James Hall.*

*Phil. Mag. No. 54, p. 124.*

The Rev. Mr. Hall previous to his visit to Ireland, through a great part